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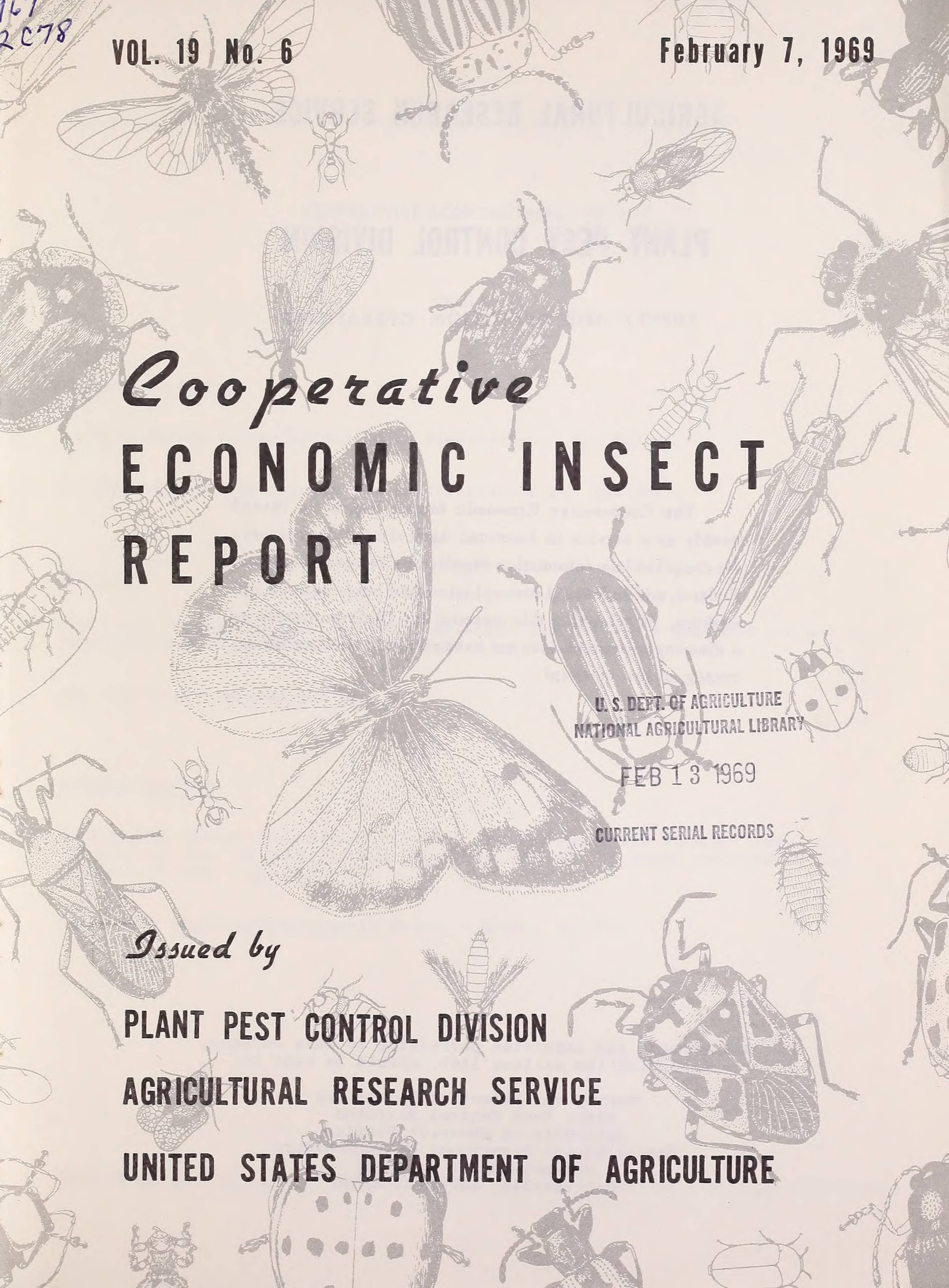

Cooperative ECONOMIC INSECT REPORT

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PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 19 February 7, 1969 Number 6

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ALFALFA WEEVIL larvae appearing in Mississippi. (p. 69).

No SCREW-WORM cases reported in southwestern U.S. (p. 70).

Detection

New State records include a TICK in Arkansas (p. 70) and a WHITEFLY and an ENCYRTID WASP in Hawaii (p. 72).

For new county records see page 73.

Special Reports

BOLL WEEVIL hibernation survey for fall of 1968 shows the average number of weevils per acre is lower than for fall of 1967 in all areas surveyed in six Southern States. (p. 74).

Summary of Insect Conditions in Hawaii - 1968. (p. 77).

Reports in this issue are for week ending January 31 unless otherwise indicated.

CONTENTS

Special Insects of Regional Significance....69

Insects Affecting

- Small Grains....69
- Forage Legumes....69
- General Vegetables....69
- Citrus....70
- Ornamentals....70
- Forest and Shade Trees....70
- Man and Animals....70
- Stored Products....71

Beneficial Insects....71
Federal and State Plant Protection Programs....71
Hawaii Insect Report....72
Insect Detection....72
Corrections....73
Light Trap Collections....73
Boll Weevil Hibernation Survey - Fall 1968....74
Summary of Insect Conditions in Hawaii - 1968....77

WEATHER BUREAU'S 30-DAY OUTLOOK

FEBRUARY 1969

The Weather Bureau's 30-day outlook for February calls for temperatures to average above seasonal normals over the eastern half of the country as well as the southern Plains. Below normal temperatures are expected from the northern Plains through the northern half of the Great Basin to the West Coast States while near normal temperatures are in prospect in unspecified areas. Precipitation is expected to exceed normal from the Appalachians through the Mississippi Valley as well as over northern portions of the Plains and Rockies. Although heavier than normal amounts are in prospect for the West Coast States, the excessive rains of the past month in California are not likely to recur. Lighter than normal rainfall is expected over the southern Plains, while near normal totals are indicated elsewhere.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING FEBRUARY 3

HIGHLIGHTS: Heavy snow continued to accumulate in the Far Northwest. Montana emerged from the "deep freeze." Mild sunny weather continued in Florida.

PRECIPITATION: Stormy weather covered most of the Nation early in the week. Heavy snow continued in Washington. On Friday snow slides blocked all highway passes and drifting snow closed many highways in the eastern part of the State. Snow accumulated to 12 to 20 inches along the coast and in the Puget Sound lowlands, 30 to 50 inches in the foothills, and 140 to over 200 inches in the mountains. Heavy rains and strong winds continued the first part of the week in California but tapered off after Tuesday. Precipitation in the Rockies and the western Great Plains, snow in the north, and mostly showers in the south ranged from moderate to heavy west of the Continental Divide but was mostly light east of the Divide and in the nearby Plains. Heavy snow fell from the eastern portions of the Dakotas to the Great Lakes early in the week, accumulating to 2 to 3 feet in the Dakotas to about 4 feet in west-central Minnesota and near 3.5 feet in northern Wisconsin. Freezing rain or freezing drizzle, sometimes mixed with light snow, occurred from eastern Nebraska early in the week to New England and southward along the coast by Thursday. Highways became heavily iced and driving, even walking, became hazardous in some areas. Weather of the week continued on page 73.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum*) - OKLAHOMA - Moderate to heavy numbers scattered in wheat in several southwest and south-central counties, especially in ungrazed fields. (Okla. Coop. Sur.). KANSAS - Remains light in wheat in Finney County. (DePew). MISSISSIPPI - Light on winter wheat in Yazoo and Franklin Counties. Nymphs, wingless adults, and some developing alate forms present. (Dinkins). NEW JERSEY - Moderate on barley near Harmony, Warren County. Collected December 9, 1968, by H. Serfass. Determined by M.D. Leonard. This is a new county record. (Race).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Populations decreased on alfalfa in Yuma County due to cool weather and heavy showers. Currently 200 per 100 sweeps. (Ariz. Coop. Sur.).

SMALL GRAINS

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - ALABAMA - Light in 2 Lee County oatfields. Winged forms and stem mothers becoming active. (McQueen).

FORAGE LEGUMES

PEA APHID (*Acyrthosiphon pisum*) - ARIZONA - Average per 100 sweeps in alfalfa in Yuma County: Yuma Valley 400, Yuma Mesa 1,750, Parker and Poston 300. (Ariz. Coop. Sur.). MISSISSIPPI - Light to medium in Lee County alfalfa; approximately 20-25 adults and nymphs in 50 sweeps. (Dinkins, Jan. 24). FLORIDA - Approximately 2-3 per sweep on alfalfa at Gainesville, Alachua County; increasing. (Mead).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Averaged 15 per 100 sweeps of alfalfa in Yuma Valley, Yuma County. (Ariz. Coop. Sur.).

A LEAFHOPPER (*Agallia constricta*) - VIRGINIA - Adults 100 per 100 sweeps of red clover in Botetourt County. Determined by J.P. Kramer. (Allen).

EGYPTIAN ALFALFA WEEVIL (*Hypera brunneipennis*) - ARIZONA - Larvae building up on alfalfa in Yuma area, Yuma County; averaged 30 per 100 sweeps. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - MISSISSIPPI - Averaged 8 first and second instars per square foot in Lee County alfalfa. (Dinkins, Jan. 24).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - FLORIDA - Adults 18 per 100 sweeps of alfalfa at Gainesville, Alachua County. (Mead).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Averaged 5 per 100 sweeps of alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Light on alfalfa in Yuma Valley, Yuma County; ranged 0-10 per 100 sweeps. (Ariz. Coop. Sur.).

GREEN CLOVERWORM (*Plathypena scabra*) - FLORIDA - Larvae 16 per 100 sweeps of alfalfa at Gainesville, Alachua County. (Mead).

GENERAL VEGETABLES

GREEN PEACH APHID (*Myzus persicae*) - ARIZONA - Colonies present on larger lettuce at Yuma, Yuma County. Treatments required. (Ariz. Coop. Sur.).

CITRUS

AN ARMORED SCALE (*Unaspis citri*) - FLORIDA - All stages very light on 82,000 citrus nursery trees at Bay Lake and Clermont in Lake County (Henderson); infesting all 52 citrus nursery plants at Gotha, Orange County (Ware).

ORNAMENTALS

TEA SCALE (*Fiorinia theae*) - ALABAMA - Crawlers on several hundred camellias examined in Lee County. (McQueen).

FERN SCALE (*Pinnaspis aspidistrae*) - CALIFORNIA - Adults heavy on *Liriope spicata* nursery stock at Oroville, Butte County. (Cal. Coop. Rpt.).

FLORIDA RED SCALE (*Chrysomphalus aonidum*) - FLORIDA - All stages were taken on *Philodendron selloum* at a nursery in Ocala, Marion County. (Holder). This is new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

AN ARMORED SCALE (*Parlatoria proteus*) - FLORIDA - Taken on leather leaf viburnum (*Viburnum rhytidophyllum*) at nursery near Federal Point, Putnam County. (Graham). This is new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

A LEAF ROLLER MOTH (*Platynota stultana*) - CALIFORNIA - Adults and larvae heavy on gardenia nursery stock in San Lorenzo, Alameda County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

CONIFER BARK BEETLES (*Dendroctonus* spp.) - CALIFORNIA - *D. brevicomis* (western pine beetle) and *D. valens* (red turpentine beetle) active. Damage increasing in Letts Lake area of Mendocino National Forest; 40+ ponderosa and sugar pines killed in 80-acre lakeshore area. (Rieger, USFS).

PACIFIC FLATHEADED BORER (*Chrysobothris mali*) - OREGON - Infested 500-600 plants in highway planting of about 20,000 plants along 9 miles of freeway near Azalea, Douglas County. Mostly dogwood, mockorange, and oceanspray planted during fall 1967; severe infestation noted during summer 1968. Infested plants replaced during November 1968. (Hazelton, Westcott).

MAN AND ANIMALS

SCREW-WORM (*Cochliomyia hominivorax*) - No cases were reported in U.S. January 26-February 1. Total of 107 cases reported in portion of Barrier Zone in Republic of Mexico January 20-25 as follows: Territorio sur de Baja California 6, Sonora 71, Chihuahua 2, Coahuila 5, Nuevo Leon 8, Tamaulipas 15. Total of 2 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 3,068,000; Mexico 42,500,000. (Anim. Health Div.).

CATTLE GRUBS (*Hypoderma* spp.) - KANSAS - Survey underway throughout State. Preliminary reports indicate numbers slightly higher than in 1967 in south-central and southeast areas. (Simpson). OKLAHOMA - *H. lineatum* (common cattle grub) light on cattle in Mayes County. (Okla. Coop. Sur.). MISSISSIPPI - *Hypoderma* spp. larvae averaged 5-6 per animal on 4 milk cows in Yazoo County. (Dinkins).

A TICK (*Ornithodoros concanensis*) - ARKANSAS - Collected from a nest of eastern phoebe (*Phoebe seyornis*) by B. Schiefer in Stone County January 4, 1969. Determination by G.M. Kohls. This is a new State record. (Boyer).

STORED PRODUCTS

POTATO TUBERWORM (Phthorimaea operculella) - PENNSYLVANIA - Heavy on stored potatoes in Cambria County. (Adams, Jan. 14).

PEA WEEVIL (Bruchus pisorum) - VIRGINIA - Damaged peas in storage room in Scott County. (Pratt, Amos, Jan. 23).

BENEFICIAL INSECTS

A EUPELMID WASP (Eupelmus cyaniceps amicus) - PENNSYLVANIA - Parasitized cocoons of Diprion similis (introduced pine sawfly) collected by A. Jeffery and L. Rhodes during September and October 1968 in Chester County. Determined by B.D. Burks and E. Simons. (Adams).

TACHINA FLIES - WEST VIRGINIA - Madremyia saundersii and Lespesia archippivora reared from adults of Danaus plexippus (monarch butterfly) collected in Monongalia County. Determined by C.W. Sabrosky. (Weaver).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Chemical Control Zone - Inspections made of 23,841 trees on 378 acres in Matamoros district negative. In Monterrey district, 781 trees on 560 acres in Municipios Linares, Hualahuises, and Montemorelos, Nuevo Leon, found infested; includes 6 new infestations in these Municipios. Inspections of 2,201 trees on 237 properties at Hermosillo, Sonora, and of 43 trees on 10 properties at Tijuana, Baja California, negative. Biological Control Zone - Inspection of 648 trees on 11 acres in Municipio Victoria, Tamaulipas, negative. (PPC Mex. Reg., Dec. Rpt.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - TEXAS - Adults light on grass at Madisonville, Madison County. Collected by O.H. Barham and W.T. Williamson January 21. Determined by D.R. Smith. This is a new county record. (PPC).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Total of 25 native flies (12 males, 13 females) trapped at Tijuana, Baja California, during 1968. One native male fly caught at Ensenada during year. No native flies caught at Tecate. Total of 15 native flies caught at La Paz, Territorio sur de Baja California during 1968. In addition, 318 A. spatulata taken at La Paz during same period. (PPC Mex. Reg., Dec. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - NEW MEXICO - Lint cleaner inspections of gins in southwest areas revealed 16 larvae from 105 bales of short staple cotton; no larvae recovered from 40 bales of long staple cotton. (Hare).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - NEW MEXICO - Survey of sweetpotatoes in warehouse at Portales, Roosevelt County, negative. (Mathews).

WOOLLY WHITEFLY (Aleurothrixus floccosus) - CALIFORNIA - Biological control investigations progressing. Eretmocerus paulistus (a eulophid wasp) and Amitus spiniferus (a platygasterid wasp) considered established in release areas of San Diego. Colonies increased. (Cal. Coop. Rpt.).

WHITE GARDEN SNAIL (Theba pisana) - CALIFORNIA - Detection survey in 10-block area involving 248 properties in Manhattan Beach, Los Angeles County, negative. (Cal. Coop. Rpt.).

HAWAII INSECT REPORT

New State Records - A WHITEFLY (*Paraleyrodes perseae*) light on plumeria in lower Manoa area of Honolulu, Oahu. Determined by L.M. Russell. (Beardsley). An ENCYRTID WASP (*Aphycus portoricensis*) reared from *Asterolecanium pustulans* (pit scale) collected at Barbers Point, Oahu, in April 1965. Described from Puerto Rico; apparently an accidental immigrant. Determined by J.W. Beardsley. (Beardsley).

General Vegetables - SWEETPOTATO VINE BORER (*Omphisa anastomosalis*) heavy in all sweetpotato fields on windward Oahu and at Haiku, Maui; damage heavy on vines, slight on tubers. SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) and SWEETPOTATO HORNWORM (*Agrius cingulatus*) very light in all fields. (Satoyama, Funasaki). LEAF MINER FLIES (*Liriomyza* spp.) larvae and adults decreased from heavy to light in 10 acres of carrots at Kealahou, Maui, elevation 2,000 feet. Larvae light on small plantings of cucumbers at Kahului, Maui, and in many snap and yard-long bean fields on Oahu. (Miyahira, Arakaki). CABBAGE APHID (*Brevicoryne brassicae*) light on backyard broccoli plantings at Puunene, Maui. Heavy (10-20 per square inch) on older leaves in 1.5 acres of head cabbages at Kaaawa, Oahu. (Olson, Suzukawa). Mostly SOUTHERN GREEN STINK BUG (*Nezara viridula*) nymphs moderate to heavy on wild spider flower (*Gynandropsis gynandra*) at Kahului; very light in acre of watercress at Pauwela, Maui. About 90 percent of adults bore eggs of *Trichopoda pennipes* and/or *T. pennipes* var. *pilipes* (tachina flies). (Miyahira, Ah Sam).

Fruits and Nuts - GIFFARD WHITEFLY (*Bemisia giffardi*) heavy on orange and tangerine trees at Kahului and light on grapefruit at Makawao, Maui; moldy leaves on many trees at Kahului. FLORIDA RED SCALE (*Chrysomphalus aonidum*) heavy on coconut leaves of many trees at Kahului, Wailuku, and Lahaina on Maui; yellowed leaves conspicuous. (Miyahira).

Miscellaneous Insects - One adult of a PYRRHOCORID BUG (*Melamphaus faber*) caught in building at Hickam Air Force Base, Honolulu, Oahu, December 6, 1968, by D.H. Kong. No additional specimens to date. Known to occur in Malaysia, breeds on fruits of chaulmoogra tree (*Hydnocarpus* sp.). Determined by J.L. Herring. (Takabayashi). RED-SHOULDERED STINK BUG (*Thyanta accerra*) remains very light and confined to swollen fingergrass on southwestern and western coasts of Oahu. Averaged 20 nymphs and/or adults per 100 sweeps in airport area and at Ewa. (Funasaki).

INSECT DETECTION

New State Records

A TICK (*Ornithodoros concanensis*) - ARKANSAS - Collected from a nest of eastern phoebe (*Phoebe seyornis*) by B. Schiefer in Stone County January 4. Determined by G.M. Kohls. (p. 70).

A WHITEFLY (*Paraleyrodes perseae*) - HAWAII - On plumeria in lower Monoa area of Honolulu, Oahu. Determined by L.M. Russell. (p. 72).

AN ENCYRTID WASP (*Aphycus portoricensis*) - HAWAII - Reared from *Asterolecanium pustulans* (pit scale) collected at Barbers Point, Oahu, in April 1965. Determined by J.W. Beardsley. (p. 72).

New County Records

GREENBUG (*Schizaphis graminum*) - NEW JERSEY - Warren County. (p. 69).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - TEXAS - Madison County. (p. 71).

CORRECTIONS

CEIR 18(51):1139 - YELLOW SCALE (Aonidiella citrina) - FLORIDA - Taken on crapemyrtle should read: Taken on *Japanese privet* (*Ligustrum japonicum*). This is not a new host record. (Fla. Coop. Sur.).

CEIR 19(5):60 - INSECT DETECTION - A DERMESTID BEETLE (Anthrenus coloratus Reitter) - Line 2 should read: "by I.E. Finold June 6, 1960..."

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 1/24-30, BL - Granulate cutworm (*Feltia subterranea*) 5, yellow-striped armyworm (*Prodenia ornithogalli*) 3. TEXAS - Brownsville - 1/25-31, 2BL, 48-84°F., 0.07 in. - Armyworm (*Pseudaletia unipuncta*) 12, black cutworm (*Agrotis ipsilon*) 67, cabbage looper (*Trichoplusia ni*) 6, corn earworm (*Heliothis zea*) 11, granulate cutworm 11, variegated cutworm (*Peridroma saucia*) 7, yellow-striped armyworm 27.

Weather of the week continued from page 68.
Widespread fog from the central Great Plains to the middle Atlantic coast increased the danger of driving. Some schools in eastern West Virginia were kept closed on Wednesday because of the severe glaze. Moderate to heavy showers fell at midweek from northeastern Texas to the Ohio River Valley and spread over the rest of the East by weekend. Totals from southwestern to northeastern Arkansas ranged from 6 to 8 inches. Considerable flooding occurred in Arkansas and in the Ohio River Valley. Ice jams in the Maumee River in Ohio caused flooding that forced 25 families from their homes. Snow fell in the central and southern Appalachians in the latter half of the week, with freezing rains in the Piedmont and rain along the coast.

TEMPERATURE: Intense cold continued in the northern Rocky Mountains and the northern Great Plains. The temperature at Havre, Montana, struggled to reach -20° Wednesday afternoon and plunged to -44° Thursday morning. Some stations in Montana had remained in subzero weather since Friday, January 17. A large area from eastern Washington to the Red River of the North averaged 10° to more than 20° colder than normal. In contrast temperatures in southern Texas and southern Florida dropped to the upper 60's each night and reached the upper 70's and low 80's in the afternoon. A cold front separated the cold air from the warm air and, at times, the transition zone was rather narrow. For instance, on Tuesday afternoon the respective afternoon maximums at Ponca City, Oklahoma, and Fort Smith, Arkansas, were 34° and 74°. The distance between the two locations is less than 200 miles. A Chinook late in the week brought the temperatures above freezing in western Montana, to the 30's in Wyoming, and the 40's in the western portions of South Dakota and Nebraska. Eastern North Dakota continued in the "deep freeze." The East and South warmed during the week and averaged above normal. A large area from Texas to Ohio and West Virginia averaged 7° to 12° warmer than normal. (Summary supplied by Environmental Data Service, ESSA.)

Boll Weevil Hibernation Survey - Fall 1968

The fall collections of surface ground (woods) trash samples (two square yards per sample) have been completed in six Southern States by State and Federal agencies to determine the number of boll weevil (Anthonomus grandis) adults that went into hibernation. A total of 3 samples was collected at each location in the Carolinas, Mississippi, Louisiana, and Texas; 12 samples were taken in Tennessee. In North and South Carolina, 30 locations were sampled in each area; the number of counties per area from which samples were taken varied from 3 to 6. In Mississippi, a total of 45 samples was taken from 15 locations in each of 4 areas; each area was composed of 2 counties. A total of 45 locations was sampled in northeastern Louisiana; 20 locations in Madison Parish, 10 in Tensas Parish, and 5 each in East Carroll, West Carroll, and Richland Parishes. This is the first year trash samples have been collected in Richland Parish. In Texas, 75 samples were taken from either 6 or 7 locations in each of 4 counties.

Average counts (live weevils per acre) were lower than those of 1967 in all areas surveyed. The number of weevils per acre entering hibernation in north-central North Carolina decreased from 4,060 in 1967 to 914 in 1968. The decrease in southern Tennessee was from 7,580 in 1967 to 1,210 in 1968.

In Florence County, South Carolina, where fall examinations have been made since 1942 (except for the fall of 1946), the number of weevils per acre (4,734) is the lowest since the fall of 1954.

In Tennessee, the survey was conducted in McNairy, Hardin, Fayette, and Hardeman Counties as infestations were heaviest in these counties during the growing season. The number of weevils per acre averaged 1,210 in those counties. This compares with 7,580 in 1967, 7,120 in 1966, 1,211 in 1965, 807 in 1964, 1,089 in 1963, 3,633 in 1962, and 3,025 in 1961. The figures for 1965 through 1961 are for McNairy County only.

The 1968 State average for Mississippi was 2,768 live weevils per acre of ground trash. This compares with 6,304 in 1967, 2,956 in 1966, 7,325 in 1965, 4,545 in 1964, 3,010 in 1963, 6,213 in 1962, and 8,403 in 1961. Except for Monroe County, there were fewer weevils present in every county in the fall of 1968 than in the fall of 1967.

In the five-parish area of northeast Louisiana, the average number of boll weevils per acre was 3,137. The average per parish was 4,114 in Madison, 2,986 in Tensas, 806 in East Carroll, 2,420 in West Carroll, and 2,581 in Richland. During the past 32 years that these records have been made in Madison Parish, there were 13 years when the number of weevils per acre was higher than in 1968. In the past 13 years that these records have been made in East Carroll and Tensas Parishes, the 1968 average was lower than any previous year in East Carroll and had been exceeded 7 times in Tensas. Collection of woods trash was started November 20 and completed December 5. All but 15 samples were collected from November 20 to November 26, but rain prevented collection of trash in West Carroll Parish until December 5. The lowest temperature recorded was 29° November 21. The temperature was 32° October 29, 31° November 12 and December 4, 30° November 13 and 19. Rainfall was recorded on 7 days after November 20, for a total of 4.21 inches. There were 8.85 inches of rain in November.

In central Texas, boll weevils averaged 4,070 per acre in the fall of 1968 compared with 4,942 in 1967, 4,877 in 1966, 4,425 in 1965, 4,406 in 1964, 517 in 1963, 1,781 in 1962, 4,114 in 1961, and 4,501 in 1960. More weevils entered hibernation in the fall of 1968 in McLennan County than any year except 1959 when the survey was started. In Limestone County the number was higher than any year except 1964 and in Falls County more weevils were found than in 4 of the previous 9 years. In Hill County fewer weevils were found this year than in any previous except 1963. The area average was lower in the fall of 1968 than in any year except 1962 and 1963. Planting was delayed in Falls, Limestone, and McLennan Counties for 3 to 4 weeks and in Hill County for 8 to 9 weeks by excessive rains. Harvest and stalk destruction were 3 to 4 weeks late in Falls, Limestone, and McLennan Counties and moderate to heavy numbers of boll weevil built up and entered hibernation. Infestation was light in Hill County, probably due to the very late planting date. (H.M. Taft, A.R. Hopkins, J.H. Locke, T.R. Pfrimmer, T.C. Cleveland, C.B. Cowan).

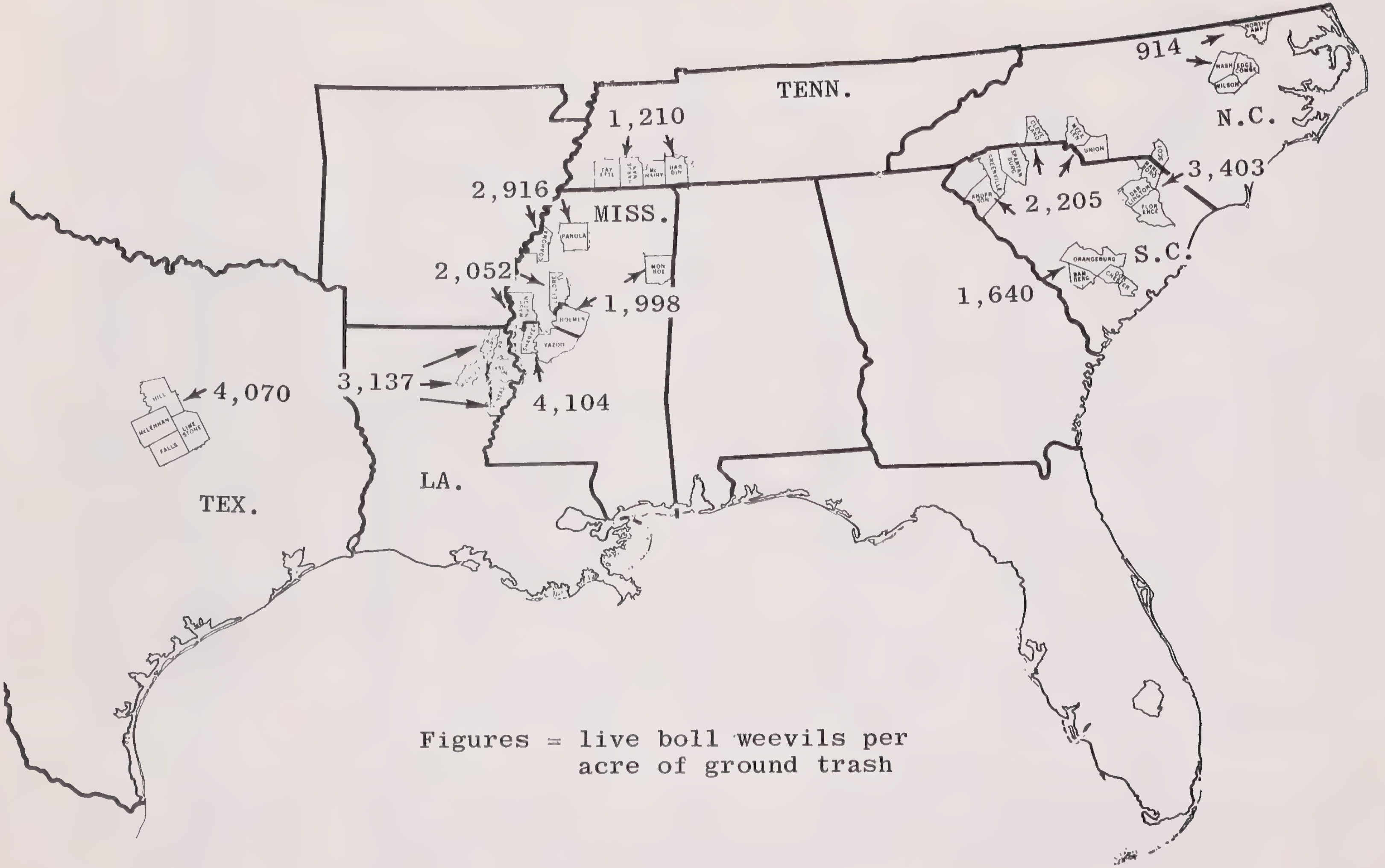
BOLL WEEVIL HIBERNATION SURVEYS - FALL 1968

Area (State and County)	Number of Weevils Per Acre	
	1967	1968
NORTH AND SOUTH CAROLINA		
South Central South Carolina (Orangeburg, Bamberg, and Dorchester Counties).	1,802	1,640
Coastal Plain of South and North Carolina (Florence, Darlington, and Marlboro Counties, S.C.; Scotland County, N.C.).	6,965	3,403
Piedmont of South and North Carolina (Anderson, Greenville, and Spartanburg Counties, S.C., Mecklenburg, Cleveland, and Union Counties, N.C.).	4,302	2,205
North Central North Carolina (Nash, Northampton, Wilson, and Edgecombe Counties).	4,060	914
TENNESSEE		
Southern Tier of Counties (McNairy, Fayette, Hardin, and Hardeman).	7,580	1,210
MISSISSIPPI		
South Delta (Sharkey and Yazoo Counties (area 1)).	7,938	4,104
Central Delta (Washington and Leflore Counties (area 2)).	4,860	2,052
North Delta (Coahoma and Panola Counties (area 3)).	5,940	2,916
Hill Section (Holmes and Monroe Counties (area 4)).	6,480	1,998
LOUISIANA		
Northeastern (Madison, Tensas, East Carroll, West Carroll, and Richland Parishes).	----*	3,137
TEXAS		
Central (Falls, Hill, Limestone, and McLennan Counties).	4,942	4,070

*Richland Parish included in 1968 survey. Only Madison, Tensas, East Carroll, and West Carroll Parishes surveyed in 1967; counts averaged 6,473 hibernating weevils for these 4 parishes in 1967.

See map on following page.

BOLL WEEVIL HIBERNATION SURVEYS - FALL 1968



Figures = live boll weevils per
acre of ground trash

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
19(6):74-76, 1969

SUMMARY OF INSECT CONDITIONS IN HAWAII - 1968

Highlights

A GRASS WEBWORM has spread to most of the islands. BEAN FLY and LARGE MANGO TIP BORER were important new Western Hemisphere records. TUMID SPIDER MITE on sweet corn and CARMINE SPIDER MITE on beans were of concern. LANTANA DEFOLIATOR CATERPILLAR controlled lantana.

Corn, Sugarcane, Rice

CORN EARWORM (*Heliothis zea*) damage ranged light to heavy on corn statewide throughout 1968. CORN PLANTHOPPER (*Peregrinus maidis*) heavily infested untreated field corn at Kaaawa, Oahu. TUMID SPIDER MITE (*Tetranychus tumidus*) built up in all sweet corn fields on Oahu from June to August. Numbers peaked in late August. Heavy infestations during harvesttime annoyed workers.

NEW GUINEA SUGARCANE WEEVIL (*Rhabdoscelus obscurus*) damage was light on Oahu and Maui but very heavy in several sugarcane fields on Kauai and in some on Hawaii Island. ASIATIC RICE BORER (*Chilo suppressalis*) was light in rice stems at Wailua, Kauai, early in November. This is the first report in the State since 1939. This infestation resulted either from the original or from a new introduction.

Turf, Pasture, Rangeland

A GRASS WEBWORM (*Herpetogramma licarsisalis*) was reported for new island records on Kauai, Maui, Hawaii, Molokai, and Lanai. On Oahu heavy numbers infested lawns and pastures from January to April and from October to December. On Kauai and Molokai heavy numbers occurred during April and May and from October to December. On Maui and Hawaii moderate to heavy numbers infested scattered areas throughout 1968. Several parasitic species occurred in heavily infested areas on all islands. The most effective appeared to be *Trichogramma semifumatum* (a minute egg parasite). Light to medium numbers of a BILLBUG (*Sphenophorus venatus vestitus*) caused light, spotty damage in Kikuyu grass pastures at Kipahulu, Maui, in March. Generally, trace to light numbers prevailed during the year on lawns and pastures in other areas of Maui and on the other islands.

General Vegetables

BEAN FLY (*Melanagromyza phaseoli*) infested snap beans at Waiahole, Oahu, in June for a new Western Hemisphere record. Later, light to severe numbers were found on lima, soy, lablab, and snap beans and on 3 species of weed legumes throughout Oahu. New island records were reported for Kauai, Maui, Molokai, Lanai, and Hawaii. BEAN POD BORER (*Maruca testulalis*) and BEAN BUTTERFLY (*Lampides boeticus*) ranged trace to light on commercial beans statewide. Heavy numbers infested untreated backyard lima and hyacinth-bean plantings during spring and summer. CARMINE SPIDER MITE (*Tetranychus cinnabarinus*) was heavy on snap beans in lowland farm areas on Oahu in January and on other crops around April. Despite intensive controls, infestations continued until late November.

IMPORTED CABBAGEWORM (*Pieris rapae*) was generally light on head cabbage and other cole crops on Maui, Hawaii, and Oahu Islands. Numbers were lighter than in past years in the Kula area of Maui, where most of the State's head cabbage is grown. A granulosis virus infected larvae in this area. DIAMONDBACK MOTH (*Plutella xylostella*) numbers and damage were heavy on head cabbage on Maui during spring and summer. Light to moderate numbers infested cole crops in scattered areas on Oahu during summer and fall.

Rains during fall and winter activated GIANT AFRICAN SNAIL (*Achatina fulica*) in weed areas on Oahu and Maui. Some snails moved into residential and farm areas. Damage ranged light to moderate on ornamentals and crops, especially eggplant and bell pepper. Crops had to be protected in several areas. Eradication measures continued in localized infested areas on Hawaii and Kauai Islands. Heavy numbers of MELON FLY (Dacus cucurbitae) caused light to severe damage to cucumbers and squash in small commercial plantings on Oahu during early 1968. Damage ranged trace to light on cucurbits and tomatoes throughout most areas on all islands due to applications of protein insecticide baits. Three adults of a TEPHRITID FLY (Ensinia sonchi) were taken on Sonchus sp. at Ewa, Oahu, in March for a new Western Hemisphere record. LEAF MINER FLIES (Liriomyza spp.) infested various crops in the lowlands of Oahu, Kauai, and Maui. Damage was heavy on green onions, watermelons, cucumbers, snap beans, tomatoes, and yard-long beans during summer and fall. Controls were intensive. Heavy numbers of POTATO TUBERWORM (Phthorimaea operculella) damaged much of about 50 acres of potatoes at Hoolehua, Molokai, during spring. Trace to light numbers of BEET ARMYWORM (Spodoptera exigua) prevailed in most green onions on Oahu. Higher numbers moderately damaged some fields at Koko Head and Waimanalo in July and at Waianae in November. TARO LEAFHOPPER (Tarophagus proserpina) remained very light in many taro fields on Oahu, Maui, Kauai, and Hawaii Islands. Over 100 nymphs and adults per stem infested a small, new planting at Waikapu, Maui, during February and March. A predator, Cyrtorhinus fulvus (a mirid bug), was light in most plantings throughout the year. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) ranged medium to heavy on various crops in lowland areas, being heaviest during the spring and fall.

Fruits

LARGE MANGO TIP BORER (Bombotelia jocosatrix) and a STINK BUG (Plautia stali) were reported as new Western Hemisphere records in 1968. Several large mango tip borer moths were taken at a light in the Punahou area of Honolulu, Oahu, in early April. For the rest of the year larvae ranged trace to light on terminal leaves of mango throughout Oahu. It was also reported on Kauai for a new island record. Larvae were noted feeding on mango blossoms at Manoa, Oahu, in mid-November. The first adult of P. stali was taken at a light on November 14, 1967. Since then, many adults have been taken at lights from various areas on Oahu. It was found feeding on black nightshade at Ewa and strawberry guava at Kailua (Lanikai).

COCONUT SCALE (Aspidiotus destructor) was reported on coconut leaves at Kailua, Oahu, for a new State record. Surveys revealed more infestations at Sand Island, Honolulu International Airport and vicinity, Kaneohe, and along the leeward coast of Oahu. MEDITERRANEAN FRUIT FLY (Ceratitis capitata) and ORIENTAL FRUIT FLY (Dacus dorsalis) were generally light in commercial fruits on all islands. Protein insecticide baits sprayed along borders were effective. Medium to heavy numbers infested guava, mountain apple, mango, rose-apple, and other fruits in forests, rangeland, waste areas, and along roadsides. BARNACLE SCALE (Ceroplastes cirripediformis) was generally medium in a commercial passionfruit farm at Kahului, Maui, early in January. By the end of 1968, numbers were generally light except in about 10 acres which remained heavily infested. The parasitic eulophid wasps Aneristus ceroplastae and Tetrastichus sp. were common. Larvae of a NOCTUID MOTH (Phlegetonia delatrix) caused much foliar damage to Java plum on Oahu and Kauai during summer and fall. Moderate to heavy numbers infested mountain apple on Oahu during fall. Reported for the first time on Maui in November, it caused moderate to heavy damage to Java plum and mountain apple in several areas. RED-BANDED THRIPS (Selenothrips rubrocinctus) heavily scarred commercial and wild guava fruits and foliage at Waimanalo, Oahu, during summer. Foliar damage was heavy on mango, Java plum, and false kamani (Terminalia catappa) on Maui in November and December, and on false kamani on Kauai in December.

Ornamentals

ORCHID WEEVIL (Orchidophilus aterrimus) numbers and damage were heavy on vanda and dendrobium orchids at Hilo, Hawaii Island, during fall. An outbreak of HIBISCUS LEAF MINER (Parectopa hibiscella) severely damaged hibiscus hedges at Hickam Air Force Base, Honolulu, Oahu, from late April to May. Subsiding in June, numbers remained at trace levels for the rest of the year. An ARMORED SCALE (Phenacaspis cockerelli) ranged light to heavy on plumeria, bird-of-paradise-flower, oleander, and on mango, coconut, and candlenut (kukui) trees on Kauai, Oahu, Maui, and Hawaii Islands. A LEAFHOPPER (Protalebrella brasiliensis) was heavy on wedelia in various areas of Oahu; foliar damage was conspicuous in several areas. HAWAIIAN THRIPS (*Taeniothrips hawaiiensis*) ranged light to heavy on flowers statewide. Gardenias were again a favorite host.

Forest and Shade Trees

A CONIFER APHID (*Cinara carolina*) was reported for a new island record on Hawaii; heavy infestations occurred at various times. Generally light infestations prevailed on loblolly pine on Maui, Kauai, Molokai, and Lanai. An APHID (*Cupressobium maui*) found on Portuguese cypress in 1967 on Hawaii was reported for new host and island records. PACIFIC BEETLE COCKROACH (*Diploptera punctata*) damage was sporadic on cypress on Maui and Hawaii Islands in June. During fall heavy numbers caused moderate to heavy damage to foliage and stems of orange trees, moderate damage to bark of Norfolk Island pine, and light damage to foliage of pineapples at Kaiku, Maui. KIAWE FLOWER LOOPER (*Cosymbia serrulata*) adults in light traps on Oahu increased in March and peaked in early June. The population appeared to be correlated with the kiawe flowering season, which occurs mostly during February and March but extends until about May.

KOU LEAFWORM (*Ethmia nigroapicella*) ranged moderate to heavy on kou trees (*Cordia subcordata*) throughout the year at Kailua-Kona, Hawaii Island. It is normally active near the end and/or the beginning of the year. CUBAN-LAUREL THRIPS (*Gynaikothrips ficorum*) built up on Chinese banyan in many areas of Oahu from January to March, but remained light for the rest of the year. Light numbers prevailed on the other islands. A predator, *Montandoniola moraguesi* (an anthocorid bug), was common on infested leaves. The usual serious spring outbreaks of MONKEYPOD MOTH (*Polydesma umbricola*) did not occur. A PSYLLID (*Psylla uncatoides*) remained generally light on koa trees on Oahu, Kauai, and Maui.

General Pests

CHINESE ROSE BEETLE (*Adoretus sinicus*) adults caused light to heavy foliar damage on ornamentals; crops; and forest, fruit, and shade trees statewide. They also infested roses, snap beans, litchi, dryland taro, and shower trees. A PLATASPID BUG (*Coptosoma xanthogramma*) ranged light to severe on ornamentals and fruit and shade trees on Kauai, Oahu, Maui, and Hawaii Islands. Adults were a nuisance in homes, hotels, and cars. Damage was slight on snap beans at Waihee, Maui, and at Kaaawa, Oahu, in April and May. It was reported on Lanai for a new island record. Light to heavy numbers of SOUTHERN GREEN STINK BUG (*Nezara viridula*) built up on weeds during spring and summer, especially on Maui. Movement into farms resulted in slight damage to crops and ornamentals. Controls were required in some fields. Nymphs and adults were found feeding on papaya trunks for the first time at Puna, Hawaii Island, in September. A BARK BEETLE (*Xylosandrus compactus*) ranged light to heavy on ornamentals, forest trees, and weeds on Kauai and Oahu. Heavy infestations were discovered on wild coffee and on forest, fruit, and shade trees at Wailuku, Maui, in November and December; this was a new island record. Many of the infested plants on Kauai, Oahu, and Maui were new host records for the State.

Man and Animals

The following mosquitoes were collected from 48 light traps on Oahu from January to October. *Aedes vexans nocturnus* averaged 16.0 per trap per month. Its highest monthly average per trap was 45.1 in April, and the lowest was 1.7 in August. Collections were higher in windward areas during spring. *Culex pipiens quinquefasciatus* (southern house mosquito) averaged 137.6 per trap per month. Its lowest monthly average per trap was 61.1 in June, and the highest was 237.5 in October. Collections were generally higher in windward areas from January to March, at Waipahu during spring, and the north shore areas during summer and fall.

HORN FLY (*Haematobia irritans*) was heavy on beef cattle, especially on Maui and Hawaii Islands. Generally light numbers prevailed on dairy cattle on Oahu. Several adults on an ENCYRTID WASP (*Homalotylus* sp.) developed as solitary internal parasites of larvae of 2 lady beetles *Telsimia nitida* and *Lindorus lophanthae* which were preying on *Aspidiotus destructor* (coconut scale) at Kailua, Oahu, in September. The determination was made by J.W. Beardsley.

Beneficial Insects

Larvae of a TORTRICID MOTH (*Apotoforma* sp.) ranged medium to heavy on blackberry terminals on Kauai, Maui, and Hawaii Islands. This insect was introduced to help control blackberry, a pasture and rangeland weed. Larvae of a CERAMBYCID BEETLE (*Archlagocheirus funestus*) continued to topple the remaining pricklypear cacti in the Kawaihae-uka, South Kohala district, Hawaii Island. Cacti in the area are now less abundant than in previous years. MELASTOMA BORER (*Selca brunella*) ranged light to medium on Indian rhododendron from January to August on Kauai and Hawaii Islands. Beginning in September, numbers increased and caused moderate to heavy damage to fruits, foliage, and terminals. Heavy numbers of a CECIDOMYIID MIDGE (*Zeuxidiplosis giardi*) infested the few remaining Klamath-weed plants on Mt. Hualalai, Hawaii Island, between 6,700-8,250 feet from August to November.

Heavy numbers of LANTANA DEFOLIATOR CATERPILLAR (*Hypena strigata*) and a NOCTUID MOTH (*Catabena esula*) caused nearly 100 percent defoliation at Ka Lae and Halepiula on Hawaii Island in March. Heavy numbers of *H. strigata* caused nearly 100 percent defoliation in approximately 1,000 acres of lantana at Keokea and Ulupalakua on Maui in April. For the rest of 1968 both species were generally light. LANTANA CERAMBYCID (*Plagiohammus spinipennis*) remained moderate at Kau, Hawaii Island. LANTANA PLUME MOTH (*Platyptilia pusillodactyla*), LANTANA SEED FLY (*Ophiomyia lantanae*), LANTANA GALL FLY (*Eutreta xanthochaeta*), and LANTANA HISPID (*Uroplata girardi*) numbered moderate to heavy in many areas. Other introduced lantana insects were generally light.

Several adults of a PTEROMALID WASP (*Halticoptera patellana*) emerged from pupae of *Melanagromyza phaseoli* (bean fly) collected at Waiahole, Oahu, in July. A low percentage of parasitism of bean fly by this wasp was observed during the rest of 1968. A HISTERID BEETLE (*Hister nomas*) was reported for new island records on Maui in November 1967 and on Molokai in April 1968. This predator of *Haematobia irritans* (horn fly) larvae was not released on either island. A SCIOMYZID FLY (*Sepedon sauteri*), a predator of liverfluke snails, was recovered on Kauai and Maui. It is now established on both islands and on Oahu. Adults of a TACHINA FLY (*Trichopoda pennipes* var. *pilipes*) were light in weed areas on Kauai, Oahu, and Hawaii Islands. *T. pennipes* and *T. pennipes* var. *pilipes* were moderate in gardens and weed areas on Maui during summer and fall. In June and October at Kula and Pukalani on Maui, 75-90 percent of *Nezara viridula* (southern green stink bug) adults bore eggs of these tachinids. A SCELIONID WASP (*Trissolcus* sp.) parasitized eggs of *Coptosoma xanthogramma* (a plataspid bug) statewide. Parasitism of egg clusters ranged from 30 to 95 percent.

Miscellaneous Insects

The following GRASSHOPPERS were new Western Hemisphere records. Nymphs and adults of *Oedaleus abruptus* were found at Hickam Air Force Base, Honolulu, Oahu, in July. Surveys revealed a generally widespread infestation on dry grass; no specimens were found elsewhere. On Oahu one male of *Euconocephalus nasutus* was caught January 15 in a vacant lot at Waipahu and another November 25 in a yard in the Kaimuki area of Honolulu.

The following were reported as new State records. A RHOPALID BUG (*Jadera haematoloma*) was found on Oahu in August. Surveys revealed moderate to heavy numbers on balloonvine (*Cardiospermum halicacabum*) from Honolulu to Waianae, Oahu. Specimens of a CADDISFLY (*Hydroptila* sp.) were caught in light traps at Honolulu International Airport and in downtown Honolulu, Oahu. The first was caught in May.

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